

Cat. No. 42-5065 OWNER'S MANUAL

Please read before using this equipment.

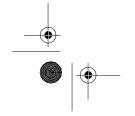
CD-3520

Portable Compact Disc Player

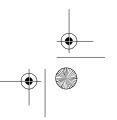




OPTIMUS_®















Your Optimus CD-3520 Portable Compact Disc Player uses the latest digital audio technology to give you the clean, crisp sound of compact discs. You can connect the CD player to your home audio or car stereo system or connect a pair of stereo earphones for portable, private listening.

The CD player's features include:

1-Bit DAC — uses the latest in digitalto-analog conversion circuitry to accurately reproduce all sound levels with virtually no distortion.

Built-In Battery Charger — recharges the batteries inside the player when you use rechargeable nickel-cadmium battery packs.

Automatic Search Music System (ASMS) — lets you quickly locate and play any track on a CD.

Audible Search — helps you locate a particular section of a track by rapidly playing the CD in either direction.

Programmable Play — lets you program and play up to 24 tracks in any sequence you choose.

Repeat Play — lets you automatically repeat a single track, an entire CD, or a programmed sequence.

Random Play — lets you play the tracks on a CD in random order.

Pause/Cue — lets you temporarily stop play, or cue a track for play at a later time.

Intro Scan — helps you locate a desired track by automatically playing the first 10 seconds of each track on the CD.

Extended Bass System — creates a fuller bass sound.

Auto Power On/Off — automatically turns on the CD player when you press PLAY/PAUSE and turns it off when you press STOP or when it finishes playing all the tracks.

Hold — prevents accidentally changing the CD player's control settings and preserves battery life by locking all controls (except OPEN) when you turn off the CD player.

Three Power Sources — let you power your CD player from four AA batteries or two rechargeable nickelcadmium battery packs, standard AC power (with an optional AC adapter), or your vehicle's battery (with an optional DC adapter).

5- or 3-Inch CD Compatible

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Important: You need a pair of stereo earphones or amplified speakers or a home audio or car stereo system to use your CD-3520. Your local RadioShack store carries a complete line of earphones, speakers, and audio systems.

The CD player's advanced technology makes it simple to operate. But, be sure you read this Owner's Manual completely so you can take advantage of all its advanced features.

We recommend you record the CD player's serial number here. The number is on the back panel.

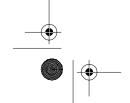
Serial Number _____

CDs that can be played on this player have this mark on them:

























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CHOOSING A POWER SOURCE

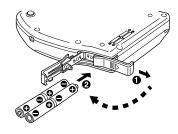
You can power your CD player from:

- Four AA alkaline batteries or two rechargeable nickel-cadmium battery packs (none supplied)
- Standard AC power, using an AC adapter (not supplied)
- A vehicle's battery power, using a DC adapter (not supplied)

USING BATTERIES

You can power your CD player from four AA alkaline batteries (such as RadioShack Cat. No. 23-552) or two rechargeable nickel-cadmium battery packs (Cat. No. RSU 11377181, available through your local RadioShack store). The CD player can recharge the nickel-cadmium battery packs while they are in the CD player.

Installing Batteries



1. Slide the battery compartment cover in the direction of the arrow, then lift it open.

 Place four AA batteries or two rechargeable nickel-cadmium battery packs in the compartment as indicated by the polarity symbols (+ and –) marked on the bottom of the CD player.

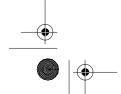
Cautions:

- Use only batteries of the required size and type.
- Never mix fresh and old batteries, alkaline and nickelcadmium battery packs, or nickel-cadmium batteries of different capacities.
- If you do not plan to use the CD player for a month or more, remove and store the batteries.
- Close the battery compartment cover.

Replace or recharge the batteries when \square flashes on the display, the sound distorts, or the volume weakens.

Cautions:

- Always dispose of old batteries promptly and properly.
- Never heat, disassemble, or throw batteries into a fire.
- Never leave dead, old, or weak batteries in the CD player. Batteries can leak chemicals that corrode or damage electronic circuits.

















Nickel-cadmium battery packs come fully discharged. You can charge the special-order batteries while they are in the battery compartment using an AC adapter (such as Cat. No. 273-1664, not supplied) or DC adapter (such as Cat. No. 273-1801, not supplied).

Warning: Do not try to charge non-rechargeable batteries. The batteries can become very hot and possibly explode.

Follow these steps to recharge nickelcadmium battery packs while they are in the battery compartment.

 Connect an AC or DC adapter. See "Using AC Power" on Page 7 or "Using Vehicle Battery Power" on Page 8.

Notes:

- It takes about 15 hours to charge fully discharged nickelcadmium batteries.
- You can play a CD while recharging the batteries; however, this could cause the batteries to recharge more slowly.
- When the nickel-cadmium battery packs fully charge, unplug the adapter from the AC outlet or cigarette lighter socket, then disconnect the adapter from the CD player.

Charging Tips

 Always keep the charging terminals clean. Use a cotton swab dipped in alcohol to clean the terminals.



- Under normal usage conditions, the nickel-cadmium battery packs can be recharged about 500 times.
- Fully discharge the battery packs occasionally by playing the CD player until it no longer plays. Then fully recharge the battery packs. This helps restore the battery packs' full charging capacity.
- Avoid charging the batteries in a hot environment (more than 113°F) as this can permanently reduce the battery packs' charging capacity.
- Do not overcharge the battery packs. Overcharging can severely reduce the battery packs' useful life.
- Do not short-circuit the battery packs' terminals (+ and –).



















Important: This portable CD player is capable of using rechargeable nickelcadmium battery packs. At the end of the battery packs' useful life, they must be recycled or disposed of properly. Contact your local, county, or state hazardous waste management authorities for information on recycling or disposal programs in your area. Some options that might be available are: municipal curb-side collection, drop-off boxes at retailers, recycling collection centers, and mail-back programs.

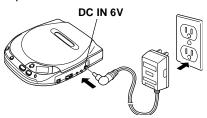
USING AC POWER

You can power the CD player from a standard AC outlet using an AC adapter, such as Cat. No. 273-1664 (not supplied).

Cautions:

- You must use an AC adapter that supplies 6 volts and delivers at least 550 milliamps. Its center tip must be set to positive, and its plug must correctly fit the CD player's DC IN 6V jack. The recommended adapter meets these specifications. Using an adapter that does not meet these specifications could damage the CD player or the adapter.
- When you finish using the AC adapter, disconnect it from the AC outlet first, then unplug it from the CD player.

Follow these steps to use an AC adapter.

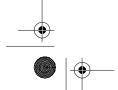


- 1. Attach the 4.0 mm outer diameter/ 1.7 mm inner diameter barrel plug to the adapter cord, matching the positive (+) on the plug with TIP on the cord.
- 2. Set the adapter's voltage switch to 6V.
- 3. Insert the adapter's barrel plug into the CD player's DC IN 6V jack.

Note: Battery power disconnects when you connect an AC adapter to the CD player (unless you are using nickel-cadmium battery packs).

4. Plug the other end of the adapter into a standard AC outlet.





















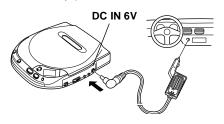
USING VEHICLE BATTERY POWER

You can power your CD player from your vehicle's battery using a DC adapter, such as Cat. No. 273-1801 (not supplied).

Cautions:

- · You must use a DC adapter that supplies 6 volts and delivers at least 550 milliamps. Its center tip must be set to positive, and its plug must correctly fit the CD player's DC IN 6V jack. The recommended adapter meets these specifications. Using an adapter that does not meet these specifications can damage the CD player or the adapter.
- · Disconnect the adapter from the cigarette-lighter socket when you are not using it to prevent the battery from being vehicle's drained.
- · Always disconnect the adapter from the cigarette-lighter socket before you unplug it from the CD player.
- If you park your vehicle in the sun, temperatures inside can easily reach levels that could damage your CD player and your CDs. To prevent heat damage, avoid leaving your CD player or CDs in your vehicle.

Follow these steps to use your vehicle's battery power.



- 1. Attach the 4.0 mm outer diameter/ 1.7 mm inner diameter barrel plug to the adapter cord, matching the positive (+) on the plug with TIP on the cord.
- 2. Set the adapter's voltage switch to 6V.
- 3. Insert the adapter's barrel plug into the CD player's DC IN 6V jack.

Note: Battery power disconnects when you connect a DC adapter to the CD player (unless you are nickel-cadmium using battery packs).

4. Plug the other end of the adapter into your vehicle's cigarette-lighter socket.























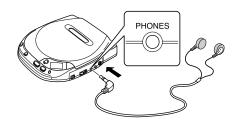
You can listen to your CD player by connecting stereo earphones or amplified speakers to the player's PHONES jack, or by connecting the player's LINE OUT jack to a home audio or car stereo system.

Notes:

- If you use the PHONES jack, use the CD player's VOLUME control to adjust the volume.
- If you use the LINE OUT jack, use the home audio or car stereo system's volume control to adjust the volume.



For private listening, plug a pair of stereo earphones with a 1/8-inch plug (not supplied) into the CD player's PHONES jack.



Listening Safely

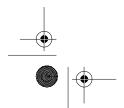
To protect your hearing, follow these guidelines when you use earphones.

- · Set the volume to the lowest setting before you begin listening. After you begin listening, adjust the volume to a comfortable level.
- · Do not listen at extremely high volume levels. Extended highvolume listening can lead to permanent hearing loss.
- · Once you set the volume, do not increase it. Over time, your ears adapt to the volume level, so a volume level that does not cause discomfort might still damage your hearing.

Traffic Safety

Do not wear earphones while operating a motor vehicle or riding a bicycle. This can create a traffic hazard and can be illegal in some areas.

Even though some earphones let you hear some outside sounds when listening at normal volume levels, they still can present a traffic hazard.











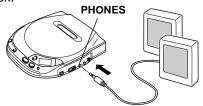






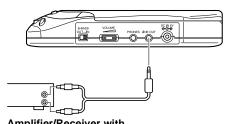
CONNECTING AMPLIFIED SPEAKERS

To listen to your CD player through a pair of amplified speakers (not supplied), plug the amplified speakers' 1/8-inch plug into the CD player's **PHONES** jack.



CONNECTING TO A HOME AUDIO SYSTEM

To listen to your CD player through your home audio system's amplifier/receiver and full-size speakers, connect the supplied Y-cable's ¹/ø-inch plug to the CD player's LINE OUT jack. Then connect the Y-cable's phono plugs to the CD, AUX, or TV audio LEFT and RIGHT input jacks on your amplifier/receiver. (If the jacks on your equipment do not match the plugs on the Y-cable, check with your local RadioShack store for the proper cable adapter.)

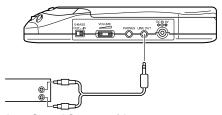


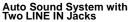
Amplifier/Receiver with LEFT and RIGHT Input Jacks

CONNECTING TO AN AUTO SOUND SYSTEM

You can listen to your CD player through your auto sound system in one of three ways.

If your auto sound system has LINE IN jacks — connect the supplied Y-cable's ¹/8-inch plug to the CD player's LINE OUT jack. Then connect the Y-cable's phono plugs to your auto sound system's LINE IN input jacks. (If the jacks on your equipment do not match the plugs on the cable, check with your local RadioShack store for the proper cable adapter.)















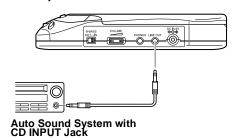




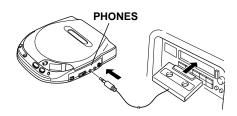




If your auto sound system has a CD input jack — you need a stereo ½-inch patch cable, such as Cat. No. 42-2387. Connect one end to the CD player's **LINE OUT** jack and the other end to the auto sound system's CD INPUT jack.



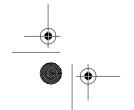
If your auto sound system has a cassette player — you can use a CD-to-cassette adapter, such as Cat. No. 12-1951. Insert the adapter into your car's cassette player just as you would insert a regular cassette. Then connect the CD-to-cassette adapter's cord to the CD player's **PHONES** jack.



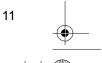
You can mount your CD player in your car using a mounting bracket. Your local RadioShack store has a complete line of mounting kits.

















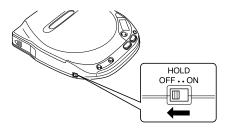




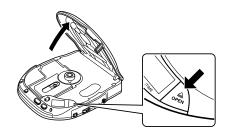
OPERATION

PLAYING A CD

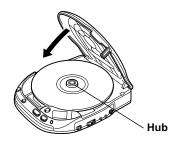
1. Set HOLD to OFF.



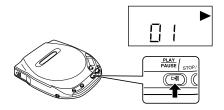
2. Press OPEN and lift the disc compartment cover.



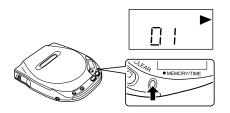
3. Carefully place the CD, label side up, over the disc compartment's center hub. Press the button on the hub gently so the CD lies flat in the compartment. Then close the compartment cover.



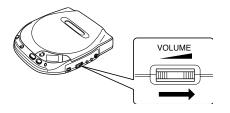
4. Press PLAY/PAUSE. The CD player automatically turns on, 00 momentarily flashes on the display, then Track 1 begins to play. The display shows the current track number.



Press MEMORY/TIME to display the current track's elapsed time. Press MEMORY/TIME again to return to the current track number.



5. Adjust the volume to a comfortable listening level.



 If you connected earphones, amplified speakers, or a CD-tocassette adapter to the CD player's PHONES jack, set VOL-UME on the CD player to the desired level.









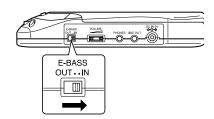




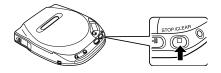




- If you connected the CD player's LINE OUT jack to amplified speakers, your home audio system, or your car's stereo, use the volume controls on those units to set the desired volume as needed.
- · To enhance the bass sound, set E-BASS to IN.



6. When the last track finishes playing, the display alternately shows the total number of tracks and total playing time of the CD for about 2 minutes, then the CD player automatically stops and turns off. To turn off the CD player before it automatically turns off, press STOP/CLEAR.



LOCKING THE CONTROLS

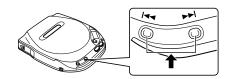
To prevent accidentally turning the CD player on or off, or changing the track you are listening to, set HOLD to ON. No controls work (except OPEN, VOL-UME, E-BASS, and HOLD).

Set HOLD to OFF to operate the controls again.

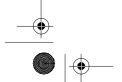
AUDIBLE SEARCH

Use audible search during play to rapidly search forward or backward to locate a specific section of a track. During audible search, the CD plays at a lower volume and a higher speed. The current track's elapsed time appears on the display.

To search forward, press and hold ▶►I. To search backward, press and hold I◀. To resume normal play, release the control.



Note: If you hold down ▶►I while the last track is playing, audible search starts again at the beginning of that same track. If you hold down | audible search stops at the beginning of Track 1.



















AUTOMATIC SEARCH MUSIC SYSTEM (ASMS)

You can use ASMS before or during regular or programmed play (see "Programmed Play" on Page 15) to quickly locate any track on a CD.

During play, press I ← to return to the beginning of the current track. Press I ← again to return to the beginning of the previous track.

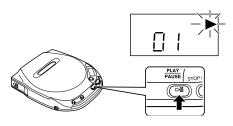
To move to the beginning of the next track, press ►►I.

While the CD is stopped, repeatedly press I◄◀ or ▶►I to move backward or forward to the desired track.



To temporarily pause play, press PLAY/PAUSE. ► flashes on the display. Press PLAY/PAUSE again to resume play.

You can also use PLAY/PAUSE to cue a track. When the CD player is stopped, press ▶▶I or I◄◄ to select the track you want to cue. Then press PLAY/PAUSE twice. ▶ flashes on the display.



To cue a track in a programmed sequence (see "Programmed Play" on Page 15), press PLAY/PAUSE to pause the CD. ► flashes on the display. Press ►►I or I◄◄ to display the track you want to cue.

To play the cued track, press **PLAY/ PAUSE**.

INTRO SCAN

The intro scan feature automatically plays the first 10 seconds of each track on a CD.

During play, repeatedly press **PLAY MODE** until **I** appears on the display. Intro scan starts from the first track.

To return to normal play, press **PLAY MODE**. I disappears from the display and the CD player resumes normal play.

Notes:

- Intro scan plays the tracks in the programmed order if you have programmed a sequence (see "Programmed Play" on Page 15).
- You can use I◄◄ and ►►I to skip through the tracks.







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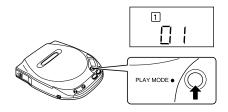




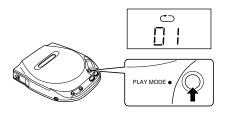


Your CD player can repeatedly play a single track, the entire CD, or a programmed sequence (see grammed Play" on this page).

To repeat a single track — before or during play, press PLAY MODE once so 1 appears on the display. At the end of the track, the CD player repeatedly plays it.



To repeat an entire CD or a series of programmed tracks - before or during regular or programmed play, press PLAY MODE twice so appears on the display. When the CD player reaches the end of the CD or the programmed sequence, it returns to the first track and continuously replays all the tracks.



RANDOM PLAY

In random play, the CD player plays all the tracks once in random order, then automatically stops. To start random play, repeatedly press PLAY **MODE** until **R** appears on the display.

Note: If you select random play during programmed play, the CD player stops the programmed sequence and starts random play of all tracks.

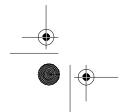
To cancel random play, press PLAY MODE so R disappears from the display.

PROGRAMMED PLAY

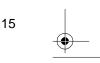
You can program up to 24 tracks on a CD to play in any order you choose, and you can program the same track to play more than once.

Follow these steps to program a seauence.

- 1. Press PLAY/PAUSE to start the CD player, then press STOP.
- 2. Press MEMORY/TIME. The selection number (01) and the track number (00) appear as M flashes on the display.
- 3. Press either ▶▶I or I◄◄ to display the number of the first track you want to program.

















- 4. Press **MEMORY/TIME** to store the selected track number. The selection number advances by one and the track number on the display returns to **00**.
- 5. Repeat Steps 3 and 4 for each track you want to program, up to 24 tracks.

Note: If you try to store more than 24 tracks in memory, **Full** appears on the display.

 To play the programmed sequence, press PLAY/PAUSE. M lights steadily and the first track in the sequence plays.

While the programmed sequence plays, you can use ►►I to move forward or I◄◄ to move backward in the sequence.

 After the last programmed track ends, the CD player stops. To manually stop the CD before the end of the sequence, press STOP/ CLEAR.

Notes:

- To replay the program sequence, press PLAY/PAUSE within 2 minutes after the CD player stops. Otherwise, the CD player turns off and clears the programmed sequence.
- To check the programmed sequence, press MEMORY/TIME within 2 minutes after the CD player stops. The display shows the number of the first programmed track. Each time you

- press **MEMORY/TIME**, the display shows the number of the next track in the sequence.
- To add to the end of a programmed sequence, repeatedly press MEMORY/TIME until track number 00 appears on the display. Then follow Steps 3 and 4.

To clear the programmed sequence from memory, press STOP/CLEAR twice.

























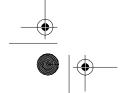
TROUBLESHOOTING

If you have problems operating your CD player, check this chart for a solution. If these suggestions do not solve the problem, contact your local RadioShack store for assistance.

Problem	Possible Cause	Remedy
Operation controls do not work.	Hold function is active.	Set HOLD to OFF.
	No power.	Check the batteries or adapter.
CD is loaded, but it does not start.	CD is loaded upside down.	Reload the CD, label side up.
	CD is dirty.	Clean the CD or try a dif- ferent CD. See "CD Care Tips" on Page 19.
The sound skips.	CD is dirty or scratched.	Clean the CD or try a dif- ferent CD. See "CD Care Tips" on Page 19.
	Vibration is heavy.	Try not to vibrate the CD player.























CARE AND MAINTENANCE

Your Optimus CD-3520 Portable Compact Disc Player is an example of superior design and craftsmanship. The following suggestions will help you care for your CD player so you can enjoy it for years.



Keep the CD player dry. If it gets wet, wipe it dry immediately. Liquids might contain minerals that can corrode the electronic circuits.



Use and store the CD player only in normal temperature environments. Temperature extremes can shorten the life of electronic devices and distort or melt plastic parts.



Keep the CD player away from dust and dirt, which can cause premature wear of parts.





Handle the CD player gently and carefully. Dropping it can damage circuit boards and cases and can cause the CD player to work improperly.



Use only fresh batteries of the required size and type. Old batteries can leak chemicals that damage your CD player's electronic parts.



Wipe the CD player with a damp cloth occasionally to keep it looking new. Do not use harsh chemicals, cleaning solvents, or strong detergents to clean the CD player.

Modifying or tampering with the CD player's internal components can cause a malfunction and might invalidate your CD player's warranty and void your FCC authorization to operate it. If your CD player is not performing as it should, take it to your local RadioShack store for assistance.





















- If you move the player from a very cold room to a warmer one, moisture can condense on the pickup lens, preventing proper CD play. If this happens, wait 1 hour for the moisture to evaporate before resuming play.
- Do not place anything but a CD in the disc tray. Doing so can damage the drive mechanism.
- During playback, a severe shock or jolt could make the CD's rotation speed change suddenly and produce some noise. This is not a malfunction.
- Always handle a CD by the edges and keep it in its protective case or sleeve when it is not in use. Fingerprints and scratches on the CD's surface can prevent the laser beam from correctly reading the digital information. To clean the CD, use a CD cleaner kit (RadioShack Cat. No. 42-226).
- A scratch on the CD's surface can make the CD skip or stop playing.
 If the CD gets scratched, use Scratch 'n Fix (RadioShack Cat. No. 42-127) to repair the scratch.
- Keep CDs dry. A water drop can act as a lens and affect the laser beam focus.

FCC INFORMATION

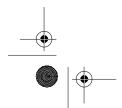
This equipment complies with the limits for a Class B digital device as specified in Part 15 of *FCC Rules*. These limits provide reasonable protection against radio and TV interference in a residential area. However, your CD player might cause TV or radio interference even when it is operating properly. To eliminate interference, you can try one or more of the following corrective measures:

- Increase the distance between the CD player and the radio or TV.
- Use outlets on different electrical circuits for the CD player and the radio or TV.
- Consult your local RadioShack store if the problem still exists.

LASER SAFETY

This unit employs a laser. Only qualified service persons should remove the cover or attempt to service this device, due to possible eye injury.

Warning: The use of controls or adjustments or the performance of procedures other than specified herein can result in hazardous exposure to laser light.

















SPECIFICATIONS

AUDIO

Frequency Response (±3 dB)	20–20,000 Hz
Dynamic Range	80 dB
Signal-to-Noise Ratio	80 dB
Harmonic Distortion at 1 kHz	0.07%
Separation at 1 kHz	70 dB
Wow/Flutter	Not Measurable
Earphones Output (10% THD at 32	ohm) 10 mW + 10 mW
Line Output	0.55 W

DISC

Diameter Standard 5-Inch and 3-Inch CDs



SIGNAL FORMAT

Sampling Frequency	44.1 kHz
Oversampling	4 Times
Quantization Number	16-Bit Linear/Channel
Transmission Bit Rate	4.3218 Mb/Second
Signal-Processing Rate	176.4 kHz

PICK-UP

Tracking System	3-Beam Tracking Servo Type
Object Lens Drive System	2-Dimensional Parallel Drive
Optical Source	Semiconductor Laser
Wavelength	780 nm





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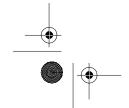


GENERAL

Power Requirements	DC 6V; Four AA Size Alkaline or Two Rechargeable Nickel-Cadmium Battery Packs (Not Included), Optional AC Adapter (273-1664), or Optional DC Adapter (273-1801)
Power Consumption	8 W
Battery Life (EIAJ Method)	7 Hours
Dimensions (HWD)	. $1^5/_{16}\times 5^1/_4\times 6^1/_4$ Inches (33.3 \times 134 \times 159 mm)
Weight (without batteries)	9.7 oz (275 g)
Included Accessory	Y-Cable
Specifications are typical; individual change and improvement without n	al units might vary. Specifications are subject to





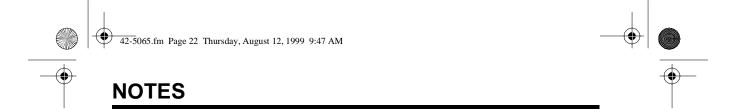






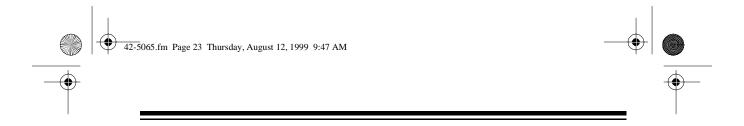


















RadioShack Limited Warranty

This product is warranted against defects for 1 year from date of purchase from RadioShack company-owned stores and authorized RadioShack franchisees and dealers. Within this period, we will repair it without charge for parts and labor. Simply **bring your RadioShack sales slip** as proof of purchase date to any RadioShack store. Warranty does not cover transportation costs. Nor does it cover a product subjected to misuse or accidental damage.

EXCEPT AS PROVIDED HEREIN, RadioShack MAKES NO EXPRESS WARRANTIES AND ANY IMPLIED WARRANTIES ARE LIMITED IN DURATION TO THE DURATION OF THE WRITTEN LIMITED WARRANTIES CONTAINED HEREIN. Some states do not permit limitation or exclusion of implied warranties; therefore, the aforesaid limitation(s) or exclusion(s) may not apply to the purchaser.

This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

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